Section 5 Results of Laboratory Analyses

5.1 Radiocarbon Analysis

Sediment collected from SIHP #50-80-9-7751, a subsurface cultural layer thought to be a remnant of both pre- to post-contact wetland taro cultivation, was sent to Beta Analytic, Inc. for radiocarbon dating, utilizing the accelerator mass spectrometry (AMS) method, in order to better establish the age range of use at the subsurface cultural deposit. Dating results are shown in Table 10 below (also refer to Appendix C). Two samples from SIHP # 50-80-9-7751 were submitted for radiocarbon dating analysis. Both samples consisted of organically enriched sediment that contained small (generally one mm or less in maximal dimensions) charcoal flecks. Charcoal extraction from these sediment samples did not yield sufficient total carbon for AMS analysis; accordingly, AMS analysis was done on the bulk carbon that was extracted from the sediment samples themselves.

The first sample (Beta-267036) yielded one possible date range, a calibrated 2-sigma date of AD 990-1170 (95%). The second sample (Beta-267037) yielded one possible date range, a calibrated 2-sigma date range of AD 1010-1190 (95%) (refer to Appendix C). These relatively early pre-contact date ranges are unfortunately problematic. They date the accumulation of organic material in the sediment itself, which may or may not be related to the use of the sediment for agriculture. Further dating is required to more concretely determine the actual agricultural use of the pondfield sediments for irrigated agriculture.

Table 10. Results of Radiocarbon Analysis

Sample #	Beta #	Type	Trench	Stratum	Depth (cmbs)	Weight (g)	Calibrated 2-Sigma Date Range
WAIPAHU KAI 01	267036	Organic Sediment	6	II	115-150	1000	AD 990-1170 (95%)
WAIPAHU KAI 02	267037	Organic Sediment	1	II	100-125	1000	AD 1010-1190 (95%)